

IN THE CLAIMS:

In accord with Rule § 1.121, a complete claim listing is presented below. A status identifier (Original), (Currently Amended), (Cancelled), or (New) precedes each claim. The changes in amended claims are shown by strikethrough for deleted material, and by underlining for added material.

1. (Currently Amended) An electrochemical sensor strip, comprising:
 - a base;
 - a first electrode on the base;
 - a first reagent layer on the first electrode, the first reagent layer comprising an electroactive organic molecule and an oxidoreductase capable of facilitating a redox reaction of a substrate;
 - a second electrode on the base; and
 - a second reagent layer on the second electrode, the second reagent layer comprising a first soluble redox species selected from the group consisting of an organotransition metal complex, a transition metal coordination complex and mixtures thereof, where
 - the first soluble redox species is capable of undergoing a redox reaction opposite that of the substrate, where
 - the second reagent layer further comprises a second soluble redox species, the second soluble redox species is a species of a redox pair comprising the first soluble redox species and the second soluble redox species, and where
 - the molar ratio of the first soluble redox species to the second soluble redox species is greater than 1.2:1 prior to use of the sensor strip in an analysis.
2. (Original) The electrochemical sensor strip of claim 1, where the composition of the first reagent layer is different from the composition of the second reagent layer.
- 3-5. (Cancelled).

6. (Cancelled).

7. (Currently Amended) The electrochemical sensor strip of claim 1, where the molar ratio of the first soluble redox species to the second redox species is greater than 2:1.

8-13. (Cancelled).

14. (Original) The electrochemical sensor strip of claim 1, where the first soluble redox species comprises ruthenium(II) hexaamine or ruthenium(III) hexaamine.

15. (Original) The electrochemical sensor strip of claim 1, where the electroactive organic molecule is selected from the group consisting of coenzyme pyrroloquinoline quinone (PQQ), substituted benzoquinones, substituted naphthoquinones, N-oxides, nitroso compounds, hydroxylamines, oxines, flavins, phenazines, phenothiazines, indophenols, indamines, phenazinium salts, phenoxazinium salts, 3-phenylimino-3H-phenothiazines, 3-phenylimino-3H-phenoxazines, and mixtures thereof.

16. (Original) The electrochemical sensor strip of claim 1, where the electroactive organic molecule comprises a 3-phenylimino-3H-phenothiazine.

17. (Original) The electrochemical sensor strip of claim 1, where the electroactive organic molecule comprises a 3-phenylimino-3H-phenoxazine.

18-21. (Cancelled).

22. (Cancelled).

23-25. (Cancelled).

26. (Original) The electrochemical sensor strip of claim 1, further comprising a third electrode on the base and a third reagent layer on the third electrode, the third reagent layer comprising a third soluble redox species.

27-29. (Cancelled).

30. (Currently Amended) An electrochemical sensor strip, comprising:
a base;
a first electrode on the base;
a first reagent layer on the first electrode, the first reagent layer comprising an electroactive organic molecule and an enzyme selected from the group consisting of glucose oxidase, glucose dehydrogenase, and mixtures thereof;
a second electrode on the base; and
a second reagent layer on the second electrode, the second reagent layer comprising a first soluble redox species selected from the group consisting of an organotransition metal complex, a transition metal coordination complex, and mixtures thereof and a second soluble redox species, where
the first and the second soluble redox species are a redox pair, and where
the first soluble redox species is a reducible species, the second soluble redox species is an oxidizable species, and the molar ratio of the first soluble redox species to the second redox species is greater than 1.2:1 prior to use of the sensor strip in an analysis.

31. (Original) The electrochemical sensor strip of claim 30, where the composition of the first reagent layer is different from the composition of the second reagent layer.

32. (Cancelled).

33. (Original) The electrochemical sensor strip of claim 30, where the electroactive organic molecule is selected from the group consisting of 3-phenylimino-3H-phenothiazines, 3-phenylimino-3H-phenoxazines, and mixtures thereof.

34-36. (Cancelled).

37. (Cancelled).

38. (Cancelled).

39-44. (Cancelled).

45. (Original) The method of claim 37, further comprising mating a lid to the base such that the lid is over the first and second electrodes and the first and second reagent layers.

46-60. (Cancelled).

61. (Currently Amended) A method of quantifying an ~~analyte~~ substrate in a sample, comprising:

contacting the sample with an electrochemical sensor strip;

the electrochemical sensor strip comprising a first electrode and a first reagent layer on the first electrode, the first reagent layer comprising an electroactive organic molecule and an oxidoreductase capable of facilitating a redox reaction of ~~a~~ the substrate;

the electrochemical sensor strip also comprising a second electrode and a second reagent layer on the second electrode, the second reagent layer comprising a soluble redox species selected from the group consisting of an organotransition metal complex, a transition metal coordination complex, and mixtures thereof; where the soluble redox species is capable of undergoing a redox reaction opposite that of the substrate;

applying an electrical potential between the first and second electrodes;

measuring a current passing through the first and second electrodes and the sample; and

correlating the current to a concentration of the analyte substrate, where the correlation between the current and the concentration of the substrate is substantially linear from zero to an analyte concentration of about 400 mg/dL.

62-64. (Cancelled).

65. (Original) The method of claim 61, where the oxidoreductase comprises an enzyme selected from the group consisting of an oxidase and a dehydrogenase; and where the soluble redox species is a reducible species.

66-67. (Cancelled).

68. (Original) The method of claim 61, where the analyte comprises glucose, and the oxidoreductase comprises glucose oxidase or glucose dehydrogenase.

69-73. (Cancelled).

74. (New) The electrochemical sensor strip of claim 1, where the molar ratio of the first soluble redox species to the second redox species is greater than 10:1.

75. (New) The electrochemical sensor strip of claim 1, where the second redox species is present in an amount less than 1 part per thousand.

76. (New) The electrochemical sensor strip of claim 1, where the first soluble redox species has a standard reduction potential of at least +0.24 volts.

77. (New) The electrochemical sensor strip of claim 1, where the first soluble redox species has a standard reduction potential of at least +0.35 volts.

78. (New) The electrochemical sensor strip of claim 26, where the third soluble redox species is substantially identical to the first soluble redox species.

79. (New) The electrochemical sensor strip of claim 2, where the electroactive organic molecule and the oxidoreductase are substantially present only in the first reagent layer, and the soluble redox species is substantially present only in the second reagent layer.

80. (New) The electrochemical sensor strip of claim 31, where the electroactive organic molecule and the enzyme are substantially present only in the first reagent layer, and the first soluble redox species is substantially present only in the second reagent layer.

81. (New) The method of claim 61, where the electrochemical sensor strip further comprises a third electrode comprising the soluble redox species.

82. (New) The method of claim 82, further comprising measuring a second electrical potential between the third electrode and the first electrode, and adjusting the electrical potential between the first and second electrodes in response to the second electrical potential.

83. (New) The method of claim 61, where the composition of the first reagent layer is different from the composition of the second reagent layer.

84. (New) The method of claim 83, where the electroactive organic molecule and the oxidoreductase are substantially present only in the first reagent layer, and the soluble redox species is substantially present only in the second reagent layer.

85. (New) The method of claim 61, where the correlation between the current and the concentration of the analyte is substantially linear from zero to an analyte concentration of about 600 mg/dL.

REMARKS**Status of the Claims**

Prior to this amendment, claims 1, 2, 6, 7, 13-17, 22, 26, 30, 31, 33, 37, 38, 45, 61, 65, and 68 were pending and claims 3-5, 8-12, 18-21, 23-25, 27-29, 32, 34-36, 39-44, 46-59, 62-64, 66, 67, and 69-73 had been cancelled. After entry of this amendment, claims 1, 2, 7, 13-17, 26, 30, 31, 33, 45, 61, 65, 68, and 74-84 are pending. Claims 1, 30, and 61 are amended. This amendment also cancels claims 6, 22, 37, and 38. Claims 74-84 are new.

Support for the Amendment

Support for the amendments to claim 1 may be found in paragraph [0054] of US 2007/0080073, the US Patent Application Publication corresponding to the present application, and in original claim 6. Claim 1 was amended with the limitation of claim 6, which is now cancelled. Support for the amendment to claim 30 also may be found in original claim 6 and in paragraphs [0054] and [0030] of US 2007/0080073, for example. Support for the amendment to claim 61 regarding current to substrate concentration may be found in the “Example 2” line of Figure 7 of US 2007/0080073. The term “analyte” also was replaced with “substrate” in claim 61 to provide consistent term usage. Hence, no new matter has been added.

Support for new claims 74-77 may be found in claims 8-11 as originally filed, but previously cancelled by preliminary amendment. Support for new claim 78 may be found in claim 27, as originally filed, but previously cancelled by preliminary amendment. Support for new claims 79 and 80 may be found in claim 32, as originally filed, but previously cancelled by preliminary amendment. Support for new claims 81-84 may be found in claims 70-73, respectively, as originally filed, but previously cancelled by preliminary amendment. Support for new claim 85 may be found in Figure 10 and the last line of Example 10, paragraph [0082], of US